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forming the foundation of its watch-tower of little quartz pebbles, sometimes producing a structure of considerable beauty. In this sandy site, the tube is preserved intact by a delicate secretion of silk, to which the particles of sand adhere. This secretion scarcely presents the character of a web-lining, but has sufficient consistency to hold aloft a frail cylinder of sand and silk, when the sand is carefully scooped away from the site of the nest.

A nest recently obtained from Vineland, N. J., furnished an interesting illustration of the power of these araneads to intelligently adapt themselves to varying surroundings and to take advantage of circumstances with which they certainly could not have been previously familiar. In order to preserve the nest, with a view to study the life-history of its occupant, the sod containing the tube had been carefully dug up and the upper and lower openings plugged with cotton. Upon the arrival of the nest in Philadelphia, the plug guarding the entrance had been removed, but the other had been forgotten and allowed to remain. The spider, which still inhabited the tube, immediately began removing the cotton at the lower portion, and cast some of it out. But guided apparently by its sense of touch to the knowledge that the soft fibres of the cotton would be an excellent material with which to line its tube, she speedily began putting it to that use, and had soon spread a soft, smooth layer over the inner surface and around the opening. The nest, in this condition, was exhibited and showed the interior to be padded for about four inches from the summit of the tower. Dr. McCook pointed out the very manifest inference that the spider must for the first time have come in contact with such a material as cotton, and had immediately utilized its new experience by substituting the soft fibre for the ordinary silken lining; or, rather, adding it thereto. This nest with the cotton wadding is figured on p. 131.

JUNE 26.

Dr. W. S. W. RUSCHENBERGER, in the chair.

Twenty-three persons present.

The Fishes of the Batsto River, N. J.—Prof. COPE gave an account of the results of fishing in the confined waters of a broken dam on the Batsto River, New Jersey. The species obtained were the following. Percidæ: *Pæcilichthys erochrous* Cope; *Eneacanthus simulans* Cope; *Mesogonistius chætodon* Baird; Aphododeridæ: *Aphododerus sayanus* Gill.; Umbridæ: *Umbra limi* Kirtl.; Esocidæ: *Esox umbrosus* Kirtl.; *Esox reticulatus* Les.; Cyprinidæ: *Cliola chalybæa* Cope; Catostomidæ: *Erimyzon succetta* Lac.; Siluridæ: *AMIURUS PROSTHISTIUS* Cope, sp. nov.; Anguillidæ: *Anguilla rostrata* Les. Prof. Cope remarked that these fishes represent the fish fauna of the Carolinian district of

the Nearctic realm, only three of the above, *Esox reticulatus*, *Erimyzon sucetta* and *Anguilla rostrata*, extending into the Alleghanian district. Of the remaining eight species, four are restricted to New Jersey, and in the case of two of them, *Pœcilichthys erochrous* and *Mesogonistius chætodon*, the corresponding parts of Delaware; the other two species being *Cliola chalybæa* and *Amiurus prosthistiis*. *Pœcilichthys erochrous* is the only Etheostomine perch which inhabits muddy waters, though it is not confined to such bottom, living as well in the gravelly but dark brown-stained streams of the New Jersey pines. The *Amiurus* is new to science, which is quite unexpected in the case of so large a fish. Its characters are as follows:—

Caudal fin rounded when expanded, not straight or slightly concave, the marginal rays being shortened. Anal fin long, one specimen with 27 rays, two with 25, and one with 24 rays. Anterior dorsal fin a good deal nearer the end of the muzzle than to the adipose fin. Length of head 2·66 times in length without caudal fin; depth at first anal ray 4·25 times in same. Greatest width of head just equal to depth of body at first anal ray. Eyes small, the space between them five times their long diameter. Pectoral spines a little larger than dorsal spines, with posterior points only, which are stronger than those of the dorsal. Maxillary barbel to near the middle of pectoral spine; humeral process little roughened, extending a little beyond middle of spine. Radii D. I. 6; C. + 18 +; V. 8; P. I. 8. Color generally black; the under surface of the head silvery white, fading on the belly to dull white and posteriorly pink, as far as base of anal fin. Fins black, pectorals and ventrals pale at base. Total length m. 0·208; from end of muzzle to base of dorsal spine, ·042; to posterior base of adipose fin ·149; to base of caudal fin (end of hæmapophysis) ·170. Depth at first anal ray ·039. Total length of a larger specimen ·233.

When first seen the specimens of this species were supposed to be unusually dark-colored examples of the common *Amiurus nebulosus*. A critical examination soon showed that they differ in the important characters of the considerably more anterior position of the dorsal fin, 4 to 7 more anal radii, and more rounded outline of the caudal fin. He had compared it with the *A. nebulosus* from Lake George, N. Y., and from the Hudson and Delaware Rivers. In fact its characters ally it to the western *A. natalis*, from which it differs by its more slender form and more rounded caudal fin.

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